Curriculum Vitae

Yulun Wu

University of Ottawa
yulun.wu@uottawa.ca

Education

2020.01-2025.01 **PhD in Geography** (Fast-tracked from MSc Geography in September 2021)
University of Ottawa, Ottawa, ON, Canada
Thesis: *Adjacency effect in nearshore aquatic remote sensing: modelling, correction, and application* [link]
Supervisor: Dr. Anders Jensen Knudby

2014.09-2019.12 **Honours Bachelor of Science in Environmental Science (Co-op)**
University of Ottawa, Ottawa, ON, Canada
Honours Thesis: *The spatial distribution of arsenic and other trace metal contaminants and their acute toxicity to Daphnia pulex in lakes near the Giant Mine in Yellowknife, Canada*
Supervisor: Dr. Jules M. Blais

Research Interests

Coastal remote sensing; atmospheric correction; ocean optics; aerosols; planetary science; radiative transfer; geospatial analysis.

Professional Experience

2024-Present	Remote Sensing and Field Technician, WSP Canada Inc. (through the Mitacs Accelerate program), Montreal
2021-Present	Lab Coordinator, Shallow Water Earth Observation Lab, University of Ottawa
2022-2023	Assistant Ecologist, Office of the Chief Ecosystem Scientist, Parks Canada
2022	Remote Sensing Technician, Liquid Geomatics, Ottawa
2021	Field Technician, Fluvial Systems Research Inc., Vancouver
2020-2024	Remote Sensing Researcher, Agriculture and Agri-Food Canada, Ottawa
2020-2022	Research Assistant, Network on Coastal, Oceans and Lake Optics Remote Sensing (NetCOLOR)
2018-2020	Spatial Analyst (Co-op), Ottawa Neighbourhood Study, University of Ottawa
2018	Assistant Librarian (Co-op), Ottawa Hospital Research Institute, Ottawa
2017	Research Assistant (Co-op), Macroecology Lab, Department of Biology, University of Ottawa

Teaching Experience

Winter 2025 **Course Instructor**
GEG3105 *Earth Observation*
University of Ottawa

2023-2024 **Guest Lecturer**
GEG4104 *Methodological and Theoretical Approaches in Geography and Environmental Studies* and GEG3105 *Earth Observation*
University of Ottawa

2021-2023 **Teaching Assistant**
MAT1371 *Descriptive Statistics*, GEG3305 *Geographies of Globalization*, GEG4702 *Le développement des villes*, ENV1101 *Global Environmental Challenges*, GEG3114 *Biogeography*, and BIO2129 *Ecology* (in chronological order)
University of Ottawa

Publications

Peer reviewed

Wu, Y., Knudby, A., Pahlevan, N., Lapen, D., & Zeng, C. (2024). Sensor-generic adjacency-effect correction for remote sensing of coastal and inland waters. *Remote Sensing of Environment, 315*, 114433. https://doi.org/10.1016/j.rse.2024.114433

Richardson, G., Foreman, N., Knudby, A., **Wu, Y.**, & Lin, Y. (2024). Global deep learning model for delineation of optically shallow and optically deep water in Sentinel-2 imagery. *Remote Sensing of Environment, 311*, 114302. https://doi.org/10.1016/j.rse.2024.114302

Richardson, G., Foreman, N., **Wu, Y.**, & Knudby, A. (2024). Global Delineation of Optically Shallow and Optically Deep Water Using Machine Learning. *IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium*, 6010–6013. https://doi.org/10.1109/IGARSS53475.2024.10641668

Wu, Y., & Knudby, A. (2023). A Tool That Calculates the Sea-Surface Reflectance Factor in Customized Environments and Geometry. *IGARSS 2023 - 2023 IEEE International Geoscience and Remote Sensing Symposium*, 464–467. https://doi.org/10.1109/IGARSS52108.2023.10282740

Wu, Y., Knudby, A., & Lapen, D. (2023). Topography-adjusted Monte Carlo simulation of the adjacency effect in remote sensing of coastal and inland waters. *Journal of Quantitative Spectroscopy and Radiative Transfer*, 108589. https://doi.org/10.1016/j.jqsrt.2023.108589

Non-peer reviewed

Wu, Y. (2022). T-Mart Radiative Transfer Code and Documentation. https://tmart-rtm.github.io

Wu, Y. (2021). Topography-adjusted Monte Carlo simulation of the adjacency effect in remote sensing of coastal and inland waters [Report in fulfillment of the requirement for fast-tracking into a PhD program]. University of Ottawa.

Wu, Y. (2020, September). Social Distancing: Easy in a Kayak Surrounded by Instruments – Collection of Remote Sensing Reflectance in Rivers. *Geography, Environment and Geomatics Newsletter*. https://arts.uottawa.ca/geography/geg-env-newsletter

Wu, Y., Cheney, C., & Blais, J. M. (2019). The spatial distribution of arsenic and other trace metal contaminants and their acute toxicity to *Daphnia pulex* in lakes near the Giant Mine in Yellowknife NWT [Honours Thesis]. University of Ottawa.

Awards & Scholarships

2024	Association of Professors of the University of Ottawa Award ($1,500)
2022-2023	Ontario Graduate Scholarship for International Students ($15,000)
2021-2025	PhD Admission Scholarship, University of Ottawa ($78,500)
2021-2022	Student Experience Fund, University of Ottawa ($1,000)
2021	BMO Financial Group Graduate Bursaries ($4,000)
2020-2021	uOttawa International Graduate Bursary, University of Ottawa ($4,000)
2020-2021	Suzanne Gratton-Sarrazin Scholarship, University of Ottawa ($2,050)
2019	Roger Guindon Scholarship Fund ($1,000)
2019	Gilles G. Patry Community Engagement Scholarship ($1,000)
2017-2019	Faculty of Science Dean's Honour List & Merit Scholarship, University of Ottawa ($3,000)
2017	Brian Rust Memorial Scholarship ($1,600)

Research Grant

2023-2024	Separation of optically deep and shallow water. *Big Idea Grant, University of Ottawa* ($20,000)

Service & Outreach

2024-Present	Manuscript reviewer: *Journal of Hydrometeorology, Remote Sensing of Environment, IEEE Trans. on Geoscience and Remote Sensing*
2024-Present	Treasurer, Ottawa Chapter, Canadian Remote Sensing Society
2024	Hosted workshop: *Building your first radiative transfer model through Monte Carlo*. Shallow Water Earth Observation Lab, University of Ottawa (January 26).
2023	Provided mentorship to an early career researcher in developing and delivering a virtual presentation for the Geo AquaWatch Water Talks series (October-November).
2020-2023	Treasurer, Geography Graduate Student Association, University of Ottawa

Field Experience

Field technician, smartHarbour project, WSP Canada Inc. Validation of satellite-derived reflectance and water properties. Satellites: S2, L8, L9, Wyvern Dragonette, and Pleiades.
St. Lawrence River, Montreal July-October, 2024 (13 days)

PhD thesis. Validation of satellite-derived reflectance and water properties. Satellites: S2, L8, and L9.
South Nation River and Ottawa River, Ottawa July-October, 2023 (6 days)

Field technician, Parks Canada. Validation of aerial and satellite-derived distribution of coastal saltmarshes and eelgrass beds. Satellites: Worldview and PlanetScope series.
Sidney Island, British Columbia June 2022 (7 days)

Field technician, Fluvial Systems Research Inc. Mapping water depth and fluvial sediment-size distribution to support ecosystem modelling of Walleye-fish habitats.
Waskaganish, Quebec November 2021 (4 days)

PhD thesis. Validation of satellite-derived reflectance and water properties. Satellites: S2 and L8.
South Nation River and Ottawa River, Ottawa August-October, 2020 (4 days)

Professional Training

NASA PACE Hackweek 2024 (August 4-8, 2024). University of Maryland, Baltimore County, the USA.

2022 International-Ocean-Colour-Coordinating-Group Summer Lecture Series (July 18-29, 2022). Institut de la Mer, de Villefranche, France.

International Fall School in Hydrographic Surveying (October 25-29, 2021). Laval University, Quebec City, Canada.

PHY2505 *Atmospheric Radiative Transfer and Remote Sounding* (Winter 2021, as an exchange student). Department of Physics, University of Toronto, Toronto, Canada

Google Earth Engine Mini-Course (May 25-29, 2020). Carleton University, Ottawa, Canada.

Qualifications

Advanced operations certificate – small remotely piloted aircraft systems (RPAS)
Wilderness First Aid with CPR training
Canada pleasure craft operator card
WHIMS, radiation safety certifications

Presentations

Wu, Y., Knudby, A., Pahlevan, N., & Lapen, D. (2024, October 9). *Improving atmospheric correction over inland and coastal waters: Sensor-generic adjacency effect correction*. Ocean Optics XXVI, Las Palmas de Gran Canaria, Spain.

Wu, Y., & Knudby, A. (2024, June 13). *Adjacency Effect Modelling and Correction for Optical Remote Sensing of Inland and Coastal Waters*. 45th Canadian Symposium on Remote Sensing, Halifax, Nova Scotia, Canada.

Wu, Y., Knudby, A., Pahlevan, N., Lapen, D., Zeng, C., & Begeman, C. (2023, November 15). *Adjacency-effect correction in remote sensing of coastal and inland waters for Sentinel-2 MSI and Landsat-8 OLI imagery*. International Ocean Colour Science Meeting 2023, St. Petersburg, Florida, the USA.

Wu, Y., & Knudby, A. (2023, July 17). *A Tool That Calculates the Sea-Surface Reflectance Factor in Customized Environments and Geometry*. The International Geoscience and Remote Sensing Symposium 2023, Pasadena, California, the USA.

Wu, Y., Knudby, A., & Lapen, D. (2023, May 29). *Adjacency Effect Modelling and Correction for Remote Sensing of Inland and Coastal Waters*. The Canadian Meteorological and Oceanographic Society 57th Congress, St. John's, NL, Canada.

Wu, Y., & Knudby, A. (2022, February 28). *Topography-Adjusted Monte Carlo Simulation of the Adjacency Effect in Remote Sensing of Coastal and Inland Waters*. Ocean Sciences Meeting 2022, Online. https://osm2022.secure-platform.com/a/gallery/rounds/3/details/5093

Wu, Y. (2021, May 7). *Topography-Adjusted Monte Carlo Simulation of the Adjacency Effect in Remote Sensing of Coastal and Inland Waters*. Geography, Environment and Geomatics Graduate Student Conference, University of Ottawa.

Wu, Y. (2021, March 17). *Topography-Adjusted Monte Carlo Simulation of the Adjacency Effect in Remote Sensing of Coastal and Inland Waters*. The 3rd National NetCOLOR Meeting, Université Laval.

Wu, Y. (2020, September 2). *Retrieval of remote sensing reflectance in the South Nation River, Ottawa*. NetCOLOR Communities-of-Practice Workshop, University of Ottawa.

Wu, Y. (2020, February 24). *Satellite derived water quality observations in inland waters*. Canadian Hydrographic Conference, Quebec City, Canada.

Wu, Y. (2020, February 11). *Remote sensing-based detection of point source pollution in Canadian waterways*. NetCOLOR Communities-of-Practice Workshop, University of Ottawa.

Wu, Y. (2019, November 6). *The use of satellite imagery to monitor inland water quality*. EVS4904 Environmental Science Seminar, University of Ottawa.

Wu, Y. (2019, October 9). *Remote sensing of seaweed in the Atlantic Ocean*. EVS4904 Environmental Science Seminar, University of Ottawa.

Wu, Y. (2019, April 8). *Lakes close to an abandoned gold mine continue to show hazardous metal(loid) concentrations for Daphnia pulex (water fleas) despite a decade of recovery* [Honours Thesis]. Poster Presentation, University of Ottawa.